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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/784,193	02/24/2004	Yoshiaki Okui	118827	1085

25944 7590 12/15/2006

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EXAMINER

TIBBITS, PIA FLORENCE

ART UNIT	PAPER NUMBER
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2838

DATE MAILED: 12/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/784,193

Applicant(s)

OKUI, YOSHIAKI

Examiner

Pia F. Tibbits

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 September 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 1 and 3-11 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2 and 12-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 February 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

This Office action is in answer to the amendment filed 6/8/2006. Claims 1-20 are pending, of which claims 12, 15 are amended.

1. Applicant's election of Group II, claims 2, 12-20 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse. **MPEP 818.03** (a) states that "As shown by the first sentence of **37 CFR 1.143**, the traverse to a requirement must be complete as required by **37 CFR 1.111(b)** which reads in part: "In order to be entitled to reconsideration or further examination, the applicant or patent owner must reply to the Office action. The reply by the applicant or patent owner must be reduced to a writing which distinctly and specifically points out the supposed errors in the examiner's action and must reply to every ground of objection and rejection in the prior Office action. The applicant's or patent owner's reply must appear throughout to be a bona fide attempt to advance the application or the reexamination proceeding to final action."

Applicant's only argument that "Group I has a judgment circuit which judges degradation of the storage battery based on the discharge voltage of the limited discharge current and Group II has a judgment circuit which judges degradation of the storage battery based on a charging time of the storage battery" and that "the complete search area for both Groups will be coextensive" is not supported by applicant's disclosure describing at, e.g., paragraphs 0010, 0020 and 0021:

[0010] In another aspect of the uninterruptible power supply device of the present invention comprises; a control circuit for controlling an output voltage of the converter to lower below a steady state, the storage battery thus to discharge at a more limited current than the rated current thereof, and the converter to supply a part of load current to the load; and a judgment circuit judges the degradation of the storage battery based on a **charging time** of the storage battery from when controlling, by the control circuit, the converter to return the output voltage to the steady state until completing full charge state thereof.

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[0020] In the other aspect of the uninterruptible power supply device of the present invention, the degradation judgment circuit comprises a timer for measuring the charge time of the storage battery.

[0021] In the other aspect of the present uninterruptible power supply device, the degradation judgment circuit comprises a timer connecting to a comparator for comparing a charging current of the storage battery with a base current.

Drawings

2. The drawings are finally objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the mutual transducer of direct and alternating current (which connects to the power source in **parallel** with the load), the transducer of alternating and direct current (which connects to the power source in **parallel** with the load), must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement-drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the examiner does not accept the changes, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

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The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 2, 12-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claims are generally narrative and indefinite, failing to conform to current U.S. practice. They appear to be a literal translation into English from a foreign document and contain grammatical and idiomatic errors. For example:

Claim 2: "from when controlling, by the control circuit, the converter to return the output voltage to the steady state until completing full charge state thereof".

Claim 12: "said load includes a direct-alternating current inverter in addition to a whole load apparatus".

Claim 15: "converter is a rectifier and a direct-alternating current inverter is connected midway between the storage battery and the load".

Claim 19: "memory memorized an operational schedule of the degradation judgment".

The above are but a few specific examples of indefinite and functional or operational language used throughout the claims, and are only intended to illustrate the extensive revision required to overcome the rejections under 35 USC 112, second paragraph. The above-mentioned corrections therefore, are in no way a complete and thorough listing of every indefinite and functional or operational language used throughout the claims. Applicant is required to revise all of the claims completely, and not just correct the indefinite and functional or operational language mentioned. The following art rejections are given in view of the above rejections of claims under 35 USC 112, second paragraph. Therefore, the following art rejections are applied only as far as the claims are understood in view of rejections made under the second paragraph of 35 USC 112.

To continue prosecution it was assumed that an on-line, double conversion type Uninterruptible Power Supply includes include a control circuit including a timer for judging the degradation of the

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storage battery based on the charging time in order to minimize the performance degradation of the battery.

Claim Rejections - 35 USC § 103

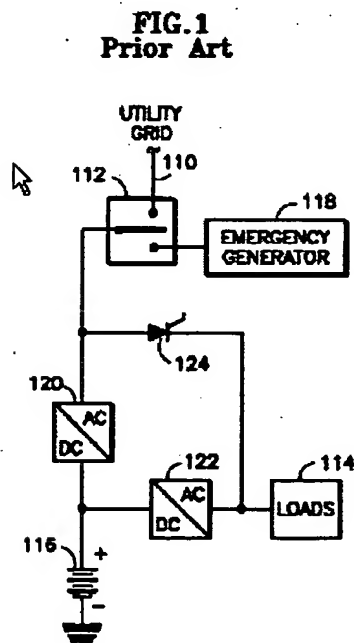
5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 2-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Young et al.**

[7061139] in view of **JP-2000341865**.

Young discloses in fig.1 an "on-line, double conversion" type UPS.



Young does not disclose a control circuit for controlling an output voltage of the converter to lower below a steady state, the storage battery thus to discharge at a more limited current than the rated current thereof, and the converter to supply a part of load current to the load; and a judgment circuit

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judges the degradation of the storage battery based on a charging time of the storage battery from when controlling, by the control circuit, the converter to return the output voltage to the steady state until completing full charge state thereof.

JP discloses in figures 1-3 and abstract a control circuit CPU and a judgment circuit judges the degradation of the storage battery based on a charging time of the storage battery.

SOLUTION: Using a clock IC 3 backed up by a primary battery 5 and a first memory 2, a clock data at power-on stored in a first memory 2 is compared with a clock data stored lastly before power-on to determine the power-off elapse time of a device. The clock data at power-on is compared with a clock data stored at a prescribed cycle after power-on to determine the power-on elapse time of a device. Based on the power-off elapse time and power-on elapse time determined respectively, the discharging time and charging time of a secondary battery 9 are controlled. It is thus possible to reduce the performance degradation of the secondary battery 9 and estimate the service life of the secondary battery 9 in step with charging and discharging cycle.

PROBLEM TO BE SOLVED: [To reduce the performance degradation of a secondary battery by controlling the discharging time and charging time of the secondary battery based on power-off elapse time and power-on elapse time.

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify Young's apparatus and include a control circuit including a timer for judging the degradation of the storage battery based on the charging time in order to minimize the performance degradation of the battery.

As to claims 12, 13, see remarks and references above.

As to claim 15, converter is a rectifier and a direct-alternating current inverter is connected midway between the storage battery and the load: with regard to the particular location of the inverter, i.e., midway between the storage battery and the load, absent any criticality, is only considered to be an

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obvious modification as the courts held that there would be no invention in shifting the location of a structure of a device to another location if the operation of the device would not thereby be modified. *In re Japikse*, 181 F.2d 1019, 86 USPQ 70 (CCPA 1950) **MPEP 2144.04**.

As to claims 16-19, see remarks and references above.

7. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Young et al.** and **JP-2000341865**, as described above, in view of **Faria et al.** [6295215].

Young and JP do not disclose PWM.

Faria discloses in an AC power supply at column 10, lines 18-21:

also applicable to single-ended transistor configurations. It will also be appreciated that a wide variety of other control circuits may be used with the invention, including, for example, average current mode control circuits using fixed frequency pulse-width modulation (PWM) techniques, as well as non-current mode control circuits that may be operated such that they provide control of current transfer through a DC/AC converter (e.g., inverter) circuit.

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify Young's and JP's apparatus and include PWM, as disclosed by Faria, in order to provide control of current transfer through a DC/AC converter (e.g., inverter) circuit.

Response to Arguments

8. Applicant's arguments with respect to the claims have been considered but are moot in view of the new grounds of rejection.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The prior art cited in PTO-892 and not mentioned above disclose related apparatus.
10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Pia Tibbits whose telephone number is 571-272-2086. If unavailable, contact

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the Supervisory Patent Examiner Karl Easthom whose telephone number is 571-272-1989. The Technology Center Fax number is 571-273-8300.

11. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

PFT

December 10, 2006

Pia Tibbits

Primary Patent Examiner

